

WHAT IS CLAIMED IS:

- 1                   1.       A method of shielding and grounding a cable, the method comprising:  
2                   providing conductive leads encapsulated within a dielectric layer;  
3                   applying a metallized layer around the dielectric layer; and  
4                   coupling a metallized thermoform connector to the metallized layer, wherein  
5                   the metallized thermoform can be electrically coupled to a grounded housing.
- 1                   2.       The method of claim 1 further comprising covering the metallized  
2                   layer with an insulating layer, wherein a portion of the metallized layer is exposed through  
3                   the insulating layer so as to allow the metallized thermoform connector to electrically contact  
4                   the metallized layer.
- 1                   3.       The method of claim 1 wherein applying comprises thermally  
2                   vaporizing the metallized layer onto the dielectric.
- 1                   4.       The method of claim 3 wherein thermally vaporizing comprises  
2                   depositing the metallized layer having a thickness between approximately one-tenth micron  
3                   and twelve microns.
- 1                   5.       The method of claim 1 further comprising contacting at least one of the  
2                   conductive leads with the metallized layer.
- 1                   6.       The method of claim 1 wherein the metallized thermoform can be  
2                   removably attached over a connector pin assembly that attaches the conductive leads to the  
3                   housing.
- 1                   7.       The method of claim 1 wherein the metallized thermoform is  
2                   metallized on at least one of an inside surface and an outside surface.
- 1                   8.       The method of claim 1 wherein coupling comprises snap fitting or  
2                   interference fitting the metallized thermoform over the metallized layer.
- 1                   9.       The method of claim 1 wherein the metallized thermoform comprises  
2                   bumps to create contact between metallized layer and the thermoform.

1                   10.    The method of claim 9 wherein the bumps are spaced no farther than  
2 one half a wavelength of the EMI radiation and have a height of no larger than one half a  
3 wavelength of the EMI radiation.

1                   11.    A shielded cable comprising:  
2                   a cable body comprising electrical conductors disposed within an insulating  
3 substrate;  
4                   a vacuum metallized shielding layer disposed over the insulating substrate,  
5 and  
6                   a metallized thermoform connector coupled to an end portion of the cable  
7 body and electrically coupled to the vacuum metallized layer, wherein the connector can be  
8 electrically coupled to a grounded housing so as to ground the shielding layer and connector.

1                   12.    The cable of claim 11 further comprising an insulating top coating  
2 disposed over the vacuum metallized layer to insulate the vacuum metallized layer.

1                   13.    The cable of claim 12 wherein the insulating top layer extends to a  
2 point short of the connector such that the connector is electrically coupled to the metallized  
3 layer.

1                   14.    The cable of claim 11 wherein the vacuum metallized layer has a  
2 thickness between approximately one-half micron to twelve microns.

1                   15.    The cable of claim 11 wherein the metallized thermoform is coupled to  
2 an outside surface of a nonconductive connector.

1                   16.    The cable of claim 11 wherein the connector further comprises spaced  
2 protrusions, wherein the connector is electrically coupled to the metallized layer with the  
3 spaced protrusions.

1                   17.    The cable of claim 16 wherein the spaced protrusions have a height  
2 and spacing between an adjacent protrusion that is no larger than one-half a wavelength of a  
3 released radiation.

1                   18.    A method of shielding a cable from EMI and RFI radiation, the method  
2 comprising:

3 providing conductive leads disposed within a dielectric;  
4 thermally vaporizing a metallized layer around the dielectric; and  
5 grounding the metallized layer to a grounded housing.

1 19. The method of claim 18 wherein grounding comprises electrically  
2 coupling the metallized layer to the grounded housing with a metallized thermoform  
3 connection assembly.

1 20. The method of claim 18 wherein thermally vaporizing comprises  
2 maintaining the temperature of the dielectric below approximately 150°F.

1 21. The method of claim 18 wherein thermal vaporizing comprises  
2 creating a substantial uniform metallized layer on the dielectric.

1 22. A shielded cable comprising:  
2 a conductive lead encapsulated within a dielectric;  
3 a polymer layer surrounding the dielectric;  
4 a metallized layer surrounding the polymer layer; and  
5 a insulative coating disposed around the metallized layer.

1 23. The shielded cable of claim 22 wherein the metallized layer is  
2 thermally evaporated over the polymer layer so as to create a substantially uniform thickness.

1 24. The shielded cable of claim 22 further comprising a base coating  
2 disposed between the metallized layer and the polymer layer, wherein the base coating  
3 improves adherence of the metallized layer to the polymer layer.

1 25. The shielded cable of claim 22 wherein the polymer layer comprises a  
2 thermoformable material.

1 26. The shielded cable of claim 22 further comprising an electrically  
2 conductive connector that is electrically coupled to the metallized layer, wherein the  
3 connector can be coupled to ground.

1 27. The shielded cable of claim 27 wherein the electrically conductive  
2 connector comprises a metallized thermoform.

1                   28.     The shielded cable of claim 27 wherein the metallized thermoform  
2 comprises a first body and a second body.

1                   29.     A method of shielding a cable, the method comprising:  
2 providing a conductive lead disposed within a dielectric;  
3 encapsulating the dielectric with a polymer coating;  
4 coupling a metallized layer around the polymer coating; and  
5 insulating the metallized layer.

1                   30.     The method of claim 29 wherein coupling comprises applying a base  
2 coating to the polymer to increase adhesion of the metallized layer.

1                   31.     The method of claim 29 wherein coupling comprises thermally  
2 vaporizing the metallized layer onto the dielectric.

1                   32.     The method of claim 29 further comprising grounding the metallized  
2 layer to a ground with a metallized thermoform.

1                   33.     A cable shield for shielding a cable body, the shield comprising:  
2 a thermoform body comprising an inner surface and outer surface, the  
3 thermoform body sized and shaped to surround the cable; and  
4 a metal layer disposed along one of the inner surface and outer surface.

1                   34.     The cable shield of claim 33 further wherein the thermoform body  
2 comprises a first body and a second body.

1                   35.     The cable shield of claim 34 wherein the first body and second body  
2 are coupled together with a clamp.

1                   36.     The cable shield of claim 33 wherein the thermoform body comprises  
2 at least one of ribs, cutouts, and corrugation to facilitate flexing of the thermoform body.

1                   37.     The cable shield of claim 33 wherein the metallized layer is disposed  
2 along the outer surface of the thermoform body, the shield further comprising an insulating  
3 layer disposed over the metal layer.

1                   38.    The cable shield of claim 33 wherein the metallized thermoform  
2 comprises an integral connector at an end of the thermoform body, wherein the integral  
3 connector can shield a connector pin assembly of the cable.

1                   39.    A method of shielding a cable, the method comprising:  
2                   providing a cable body having a body and at least one connector pin assembly;  
3                   placing a metallized thermoform around the cable body and connector pin  
4 assembly;  
5                   grounding the metallized thermoform.

1                   40.    The method of claim 39 wherein placing comprises snap fitting the  
2 metallized thermoform around the cable body.